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EXAMINER

VITAL F

ART UNIT

PAPER NUMBER

2186

DATE MAILED:

06/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/164,898

Applicant(s)

Akiyama, James

Examiner

Pierre Vital

Art Unit

2186



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Apr 17, 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-3 and 7-18 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-3 and 7-18 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other: _____

Art Unit: 2186

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed April 17, 2001 in response to PTO Office Action dated January 17, 2001. The applicant's remarks and amendment to the specification and/or the claims were considered with the results that follow.
2. Claims 1-3 and 7-18 have been presented for examination in this application. In response to the last Office Action, claims 7 and 12 have been amended. No claims have been canceled. Claims 16-18 have been added. As a result, claims 1-3 and 7-18 are now pending in this application.
3. The rejection of claims 1-3 and 7-15 As in the Office Action mailed November 22, 2001 is respectfully maintained and reiterated below for Applicant's convenience.

Claim Rejections - 35 USC § 103

4. The following is As a quotation of 35 U.S.C. 103(As a) which forms the basis for all obviousness rejections set forth in this Office action:

(As a) As a patent may not be obtained though the invention is not identically disclosed or described As set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter As As a whole would have been obvious at the time the invention was made to As a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 2, 7-9, 11- 13, 15-16 and 18 are rejected under 35 U.S.C. 103(As a) As being unpatentable over Anderson (US5,905,910) and Jones et al. (US5,619,723).

Art Unit: 2186

As per claims 1, 7, 8, 11, 12, 15 and 16, Anderson teaches As a system for multi-threaded disk drive interrupt processing wherein the first and second disk drives 110 and 112 may be integrated device electronics (IDE) disk drives wherein the disk drive itself contains many of the required interface components; with IDE disk drives, As a single interface coupled to the bus system 108 is capable of operating multiple IDE disk drives [Col.5, lines 28-33]; it is the instructions in the BIOS 106 itself that controls the positioning of the read/write head in the first disk drive 110 and the second disk drive 112 [Col.8, lines 12-15]; in the disk striping embodiment of the system 100, As a data file is apportioned into blocks that are alternately stored (interleaved) on the first drive 110 and the second drive 112; the system 100 advantageously allows the BIOS 106 to issue commands to both the first disk drive 110 and the second disk drive 112 to allow each of the first and second disk drives to simultaneously (parallel) perform the consuming task of positioning the read/write head at the proper location on the disk drive [Col.8, lines 62-67; Col.9, lines 1-3]; with respect to the disk striping aspect of the system 100, the operating system behaves As if there is As a single disk drive (single physical drive) rather than the first disk drive 110 and the second disk drive 112 [Col.7, lines 60-63]. However, Anderson fails to specifically teach an interface connected to the system bus and communicating with the BIOS; and As a striping controller connected between said first and second disk drives and said interface, said striping controller causing data being communicated between said system bus and said first and second drives to be substantially read or written in parallel.

Art Unit: 2186

Jones discloses an interface connected to the system bus and communicating with the BIOS [Col.14, Lines 24-31]; As a striping controller connected between said first and second disk drives and said interface [Col.14, Lines 28-33], said striping controller causing data being communicated between said system bus and said first and second drives to be substantially read or written in parallel [Col.16, Lines 32-35].

It would have been obvious to one of ordinary skill in the art, having the teachings of Anderson and Jones before him at the time the invention was made, to modify the system taught by Anderson to include As a controller for controlling striping of the disks, the controller causing data being communicated between said system bus and said first and second drives to be substantially read or written in parallel because it would have improved system performance by allowing reconstruction of data without any down time As taught by Jones.

As per claims 2, 9 and 13, Anderson teaches this process is repeated with data transfers alternating between the first disk drive 110 and the second disk drive 112 [Col.12, lines 18-20].

6. Claims 3, 10 and 14 are rejected under 35 U.S.C. 103(As a) As being unpatentable over Anderson (US5,905,910) and Jones et al. (US5,619,723) and further in view of Jenkins (US4,047,157).

As per claims 3, 10 and 14, the combination of Anderson and Jones teach the claimed invention As detailed above in the previous paragraphs. Anderson further teaches the BIOS 106

Art Unit: 2186

contains instructions, which the CPU 102 executes, to transfer data or commands to the internal registers of the first disk drive 110; for example, the disk transfer command to the first disk drive 110 will include data such as the physical location on the first disk drive from which the data file will be read (system request); the BIOS 106 also contains instructions to issue commands to the second disk drive 112 in preparation for as a data transfer with the second disk drive [Col.8, lines 54-61]. However, neither Anderson nor Jones specifically teach that the system request includes as a sector bit string, as a head bit string, as a track bit string and as a driver bit as recited in the claims.

Jenkins teaches as a controller for use in as a data processing system wherein in the track/sector register 146 Track Address and Sector Address bit positions identify, respectively, the track and sector on as a disk to be involved in as a transfer; in as a fixed-head unit, the Track Address bits identify as a specific head [Col.20, lines 38-42]; as a Write signal, produced in response to the function bits, enables drivers 297 to load data onto the data set 101 [Col.26, lines 26-28].

It would have been obvious to one of ordinary skill in the art, having the teachings of Anderson and Jones and Jenkins before him at the time the invention was made, to modify the system taught by Anderson and Jones to include sector bit string, head bit string, track bit string and driver bit in the system request because it would have improved processing speeds and memory access times by providing the system identification information for the physical location on the drive from which the data file will be read or written as taught by Jenkins.

Art Unit: 2186

7. Claim 17 is rejected under 35 U.S.C. 103(As a) As being unpatentable over Anderson (US5,905,910) and Jones et al. (US5,619,723) and further in view of Solomon et al. (US6,161,165).

As per claim 17, the combination of Anderson and Jones teach the claimed invention As detailed above in the previous paragraphs. However, neither Anderson nor Jones specifically teach As a first FIFO memory driven by As a signal from the exclusive-or gate to access the first storage and As a second FIFO memory driven by the signal inverted from the exclusive-or gate to access the second storage As recited in the claim.

Solomon discloses As a first FIFO memory driven by As a signal from the exclusive-or gate to access the first storage and As a second FIFO memory driven by the signal inverted from the exclusive-or gate to access the second storage [Col.11, Lines 23-42].

It would have been obvious to one of ordinary skill in the art, having the teachings of Anderson and Jones and Solomon before him at the time the invention was made, to modify the system taught by Anderson and Jones to include As a FIFO memory driven by As a signal from the exclusive-or gate to access the storage because it would have improved system performance by simultaneously Xoring the data while they are provided in the data path As taught by Solomon.

Art Unit: 2186

Response to Arguments

8. Applicant's arguments filed April 17, 2001 have been fully considered but they are not persuasive. As to the remarks, Applicant asserted that:

(As a) Jones does not anticipate the present invention because Jones does not teach an interface that communicates directly with the BIOS;

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., an interface that communicates directly with the BIOS) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner would like to point out that the claims only disclose an interface that communicates with the BIOS. The claims As recited lead to different interpretations of how the communication between the interface and the BIOS is made (i.e. directly or indirectly ?).

(b) Neither Anderson nor Jones disclose receiving at As a striping controller an IDE system request intended for As a single physical drive for the system bus;

Examiner respectfully traverses Applicant's argument. Examiner would like to emphasize that Jones teaches the equivalent concept As detailed in column 15, lines 10-15. In fact, when the host sends As a read or write requests, controller 100 generates access requests for each of the individual disk drives As claimed by Applicant.

Art Unit: 2186

(c) Neither Anderson nor Jones disclose control logic connected with said interface to cause data being communicated via said system bus to be written to and read from As a first and As a second disk drive in an interleaved form and substantially in parallel;

Examiner respectfully traverses Applicant's argument. Examiner would like to point out that positioning of the read/write head in the first disk drive and the second disk drive must be controlled. Therefore, it is inherent that As a control logic must be present to perform the writing and reading to the disk drives As claimed by Applicant.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy As set forth in 37 C.F.R. 1.136(As a).

As a shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event As a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R. 1.136(As a) will be calculated from the mailing date of the advisory action. In no event,


Art Unit: 2186

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Monday to Friday from 8:30 A.M. to 6:00 P.M., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim, can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-9731.

Any inquiry of As a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.


MK/pmv

June 25, 2001


MATTHEW KIM
SUPERVISORY PATENT EXAMINER
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